

**ROCKY MOUNTAIN CENTER FOR
OCCUPATIONAL AND
ENVIRONMENTAL HEALTH -
EDUCATION AND RESEARCH CENTER
FOR OCCUPATIONAL SAFETY AND
HEALTH**

SUMMARY ANNUAL REPORT

July 1, 2010-June 30, 2011

**NIOSH Training Grant
No. T42 OH 008414**

**SUBMITTED BY:
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CENTER DIRECTOR
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SALT LAKE CITY, UT 84108**

(October 1, 2011)

Administration Kurt T. Hegmann, MD, MPH, Center Director

In 2010-11, the RMCOEH continued to meet all goals and objectives. The RMCOEH holds monthly Center Executive Committee meetings, biannual RMCOEH Advisory Board meetings, Advisory Board Executive Committee meetings and an annual RMCOEH retreat. There were several major advances.

- The RMCOEH has matriculated and graduated its third class of students in our new, accredited Master of Occupational Health and Master of Science in Occupational Health Degree Programs.
- The center further implemented a new plan to increase student publications, with demonstrable successes over the past 2 years.
- Faculty completed work on the most extensive evidence-based treatment guidelines for injured workers in existence for the American College of Occupational and Environmental Health
- RMCOEH received notification of funding of one new K01 award and a promising score on a second.

Diversity Recruitment Darrah Sleeth, PhD,

RMCOEH faculty members continue to work with Sweeney Windchief, Assistant Dean for Diversity at the University of Utah to maintain and increase recruitment from under-represented groups. Dr. Larson has met with Native American students through the University Visit Program to provide potential students with information on our programs. In addition, the McNair Scholars Directory is a useful resource in our diversity recruiting efforts.

Statistical Economic Evaluation Unit (SEEU) Maureen Murtaugh, PhD

The SEEU served as a resource to the Center in providing the statistical and economic tools for evaluating interventions to improve workplace health and safety. The SEEU has contributed through providing insights, including participation in journal club meetings, consultation regarding analysis approach for publications, and participation in grant preparation. A graduate student survey was administered and results will be utilized in planning to keep educational programs exceptional.

Outreach Connie Crandall, MA, MBA

Outreach continued to be a significant emphasis at the RMCOEH, maintaining the goal of ensuring that knowledge is translated into practice. The Center policy requires measurable outreach activities by each faculty member with thousands of contact hours recorded annually. For example, in 2010-2011, over 1,500 contact hours were logged through activities that included committee appointments, presentations, consultations, and participation in career day events for national, regional and academic institutions, local business and trade, insurers, community groups, occupational and environmental health organizations, and the public. The program is exploring the use of social media and is in discussions relative to creating a blog for dissemination of newsletters, research results, papers, etc.

Pilot/Small Projects Research Training (PPRT) Matthew Hughes, MD, MPH

The RMCOEH Pilot/Small Projects Research Training Program and the 4 awardee/investigators continue to make excellent progress in advancing the NORA II research agenda and providing research career development. Dr. Sleeth completed her project "*Air Characterization of Nail Salons in Salt Lake County, Utah: A Pilot Study*", and a manuscript is being prepared for submission to an appropriate peer-reviewed publication. The results are pertinent given current national interest in formaldehyde exposures in hair salons. Dr. Park and Mr. Ogutu have completed "*An efficient method for modeling an individual's perception for postural stress*", and will present the results at the HFES conference in September 2011. Mr. Ogutu (PhD candidate) anticipates 2 peer-reviewed publications. Dr. Biggs has completed most work on his project, "*Cross-education following Unilateral coordination training: a prospective, randomized, single-blind, controlled study*". Subject recruitment has been difficult due to lack of incentives. This has been rectified, with anticipated completion of data generation in October. It is anticipated the manuscript will be completed and submitted to the Journal of Physical Medicine and Rehabilitation in December. A presentation at a national meeting is anticipated in Spring of 2012. Dr. Foreman and Dr. Sesek have completed most work on his project "*Modifying risk estimates for low back pain based on disc pressure: An investigation of the relationship between general anthropometry and low back spine characteristics using radiographic image data (MRI)*". Delayed IRB approval delayed project start. All data have been collected, with 50% of analyses completed. Dr. Sesek anticipates completion of manuscript and journal submission by December 2011. This project has resulted in additional funding through the Deep South Center for Occupational and Environmental Health to compare data with another population subset.

The Pilot/Small Projects Research Training Management Committee met on 23 June 2011. Members were pleased with grading process, funding levels, and the number and quality of applications.

NORA Research Project Kurt T. Hegmann, MD, MPH

The LBP cohort study continued. We have not enrolled more subjects in the past year. We have worked to complete data clean-up with the dataset at approx. 100M datapoints. Final statistical analyses have begun.

Ergonomics & Safety (E&S) Don Bloswick, PhD, PE, CPE

The E&S Program trained 14 full time (4 M.S., 10 Ph.D.) and 11 part time trainees (10 M.S., 1 Ph.D.) of whom 11 graduated during the AY (11 M.S.). The academic program now consists of eight 3-credit courses offered on a regular basis. All topics (both "highly recommended" and "recommended") noted in the NIOSH Guidelines for Graduate Programs in Occupational Safety (by The Occupational Safety Academic Training Program Panel) are covered in the M.S. and Ph.D. program courses (or pre-requisites). E&S students are required to present their research at the successful, annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, which has been held on the University of Utah campus since 2003. The interdisciplinary course "Occupational Health Solutions" has been refined even further and is a great success. The course is team taught by Drs. Wood, Merryweather, and Larson (OM, E&S, and IH cores). This course includes on-site student projects completed by interdisciplinary teams from RMCOEH (IH/HSAT, OM, OIPRT, and E&S) who visit local manufacturing facilities and work together to solve real world health and safety problems. It is a required capstone course for all trainees. The off-site ATK M.S. Mechanical Engineering Program includes 20 active students, of whom approximately 30% focus on Ergonomics and Safety as their area of emphasis and take 3-5 E&S courses. Dr. Bloswick developed the approved graduate Systems Engineering Certificate in AY 2008/9 which continues. One area of emphasis is ergonomics and safety. Fifteen students have completed the certificate and there are approximately twenty-five active students in the program.

Industrial Hygiene (IH) Rod Larson, PhD, CIH

The IH program continued to meet its goals and objectives. Four students graduated from the IH program this period with degrees having emphasis in industrial hygiene; one with an MPH degree, one with an MSPH degree, and two with an MSOH degree. Four full-time IH students began matriculation as new students in the Master of Science in Occupational Health (MSOH) degree. Returning students include one part-time student's and two full-time students in the MSOH degree program with emphasis in IH. Not including those that graduated, this brings the total number of IH students for this last year to eleven, when the students that graduated are included; eight full-time and three part-time students. The IH Program research projects included evaluation of worker exposures to select organic vapors in nail salons, an evaluation of direct-read instruments to evaluate potential exposures to silica in air in various environments, and a meta-analysis of evaluating the effectiveness of the DustTrak aerosol monitor for use to provide acceptable estimates for potential exposure concentrations of diesel particulates in the workplace. It should also be noted that a manuscript on this last study (the meta analysis of a direct-read monitoring device) has been accepted for publication by the Journal of Chemical Health & Safety. We are currently accredited by ABET-ASAC and receive our site visit by an accreditation evaluation team in September, 2010. On August 2, 2011 we received official notice of renewal of our accreditation to September 30, 2017.

Hazardous Substances Academic Training (HSAT) Leon Pahler, PhD, MPH, CAIH

The HSAT program continued to meet its goals and objectives. One student graduated from this program in May, 2011 with MSOH degrees, emphasis in IH-HSAT. Six new students entered the program in addition to two current part-time students, and two current (returning) full-time students in the MSOH degree program with emphasis in IH-HSAT. This brings the total number of HSAT students to eleven (11) for this period when including the student that graduated. In addition, because of diversity recruiting, one of our current HSAT students is of Hispanic ethnicity, and a new HSAT student is Chinese. As mentioned in the IH program summary, the Master of Science in Occupational Health (MSOH) degree is granted to HSAT as well as the general IH programs, and therefore, both are accredited by ABET-ASAC to September, 2017. The HSAT students were involved in multiple research projects, including evaluation of direct-read monitoring equipment to monitoring concentrations of various particulates in air generated in mining operations, road work activities, and rock crushing projects (e.g., silica and various metals exposure correlations between pump-filter methods and the real-time instruments. These evaluations involved testing of a GRIMM portable aerosol spectrometer to monitor for select metals, DustTrack model direct-read aerosol monitor, and a TRI Dust Pak monitoring unit.

Occupational Injury Prevention & Research Training (OIPRT) Don Bloswick, PhD, PE, CPE

The OIPRT program continued to meet its goals and objectives. The program trained four PhD level trainees during the AY. The two primary goals from the last grant submission, (1) provide quality Occupational Safety Engineering (OSE) and Occupational Injury Epidemiology (OIE) academic programs, and (2) accomplish NORA-related OSE and OIE research and translate it into practice (r2p) have been accomplished. The academic program integrates engineering and epidemiology, with students in the OSE program emphasizing engineering and students in the OIE program emphasizing epidemiology. Three of the four OIP Students were involved in two large prospective NIOSH-funded research projects: Upper Limb Musculoskeletal Disorders - Quantifying Risk and/or Low Back Pain - Quantifying Risk Factors. One first-year Ph.D. OIPRT student has extensive academic and practical experience in construction safety. His Ph.D. research will likely relate to this area. In addition to journal submissions, students are required to present their research at the annual Regional National Occupational Research Agenda (NORA) Young/New Investigators Symposium, which has been held on the University of Utah campus since 2003.

Occupational Medicine (OM) Eric Wood, MD, MPH

In total, the OM residency program has trained 82 highly skilled OM physicians filling a critical need to NIOSH Region VIII, which is underserved by OM specialists. During the period of 07/01/10-06/30/11, 10 residents were enrolled in the program with 7 residents in the academic PGY-2 year, and 3 residents in the practicum PGY-3 year (1 off-cycle resident transitioned from PGY-2 to PGY-3 year in January 2011; 2 residents in the PGY-2 year enrolled off-cycle with one beginning in August 2010, and the other beginning in March 2011). Current academic training consists of completion of graduate education over a period of 2 semesters leading to the MOH degree. Two graduating PGY-3 residents completed the MOH degree in May 2009. Two residents from the US Air Force completed the MOH degree in May 2011 and are now PGY-3 Residents in Aerospace Medicine (RAM) with the US Air Force. We anticipate maintaining or increasing the number of residents through the US Air Force, and 2 RAM residents have already agreed to enter the MOH program for the 2011-2012 year. We also plan to increase the number of residents in the 2011-2012 academic year due to a grant awarded by the US Health Resources and Services Administration (HRSA). Clinical and research activities continue as in the past year. The program is developing updates to clinical practice guidelines for the American College of Occupational and Environmental Medicine (ACOEM) to improve care of injured workers.

Continuing Education (CE) Connie Crandall, MA, MBA

The CE Program met its goals and objectives for 2010-2011. Attendance remained high with 2818 trainees attending 152 CE activities. This includes both traditional (2694 trainees) and online (58 trainees) activities. The program continues to offer distance education courses that include online OSHA courses that are offered in cooperation with a commercial provider. It also continues to successfully offer the online Ethics and Professional Practice of Industrial Hygiene course. An online journal club is still under development. We continue to offer a number of courses in surrounding areas to enhance regional coverage. Courses were conducted in Burley, ID, Moab, UT, Billings, MT, Tremonton, UT, Layton, UT, Evanston, WY, Green River, WY, and Pocatello, ID. The program, again, collaborated with the MAP ERC in Colorado to sponsor the Rocky Mountain Academy of Occupational Medicine conference in Denver on February 4 & 5, 2011 and, also in collaboration with the MAP, supported the Helena Conference on Occupational Safety and Health that was held November 4-5, 2010. New courses offered during this period include 1) Designing the Age-Friendly Workplace; 2) Exposure Assessment Strategies and Statistics; 3) Construction Safety, 4) Carpal Tunnel Syndrome and Lateral Epicondylitis: Exposures and Current Research, 5) Understanding Your Audience and Role for Effective Risk Communication, 5) Workplace Aerosol Sampling; and 6) Process Safety Management. A regional needs assessment was also conducted in July 2010.

Hazardous Substance Training (HST) Connie Crandall, MA, MBA

The HST Program met its identified goals and objectives for 2010-2011. 289 trainees attended 24 HST courses. Four courses were offered outside of Salt Lake City, UT and include the following: 24-Hour Hazwoper Training, 8-Hour Hazwoper Refresher and Incident Command Training. Hazardous substances online courses are provided in partnership with the American Safety Council. A regional needs assessment was conducted in 2010; as they are conducted every other year, the next assessment will be conducted in 2012. The target audience for the assessment includes government agencies as well as other facilities and organizations with a projected need for hazardous substances training. Several of these government agencies are represented on the HST Advisory Committee.